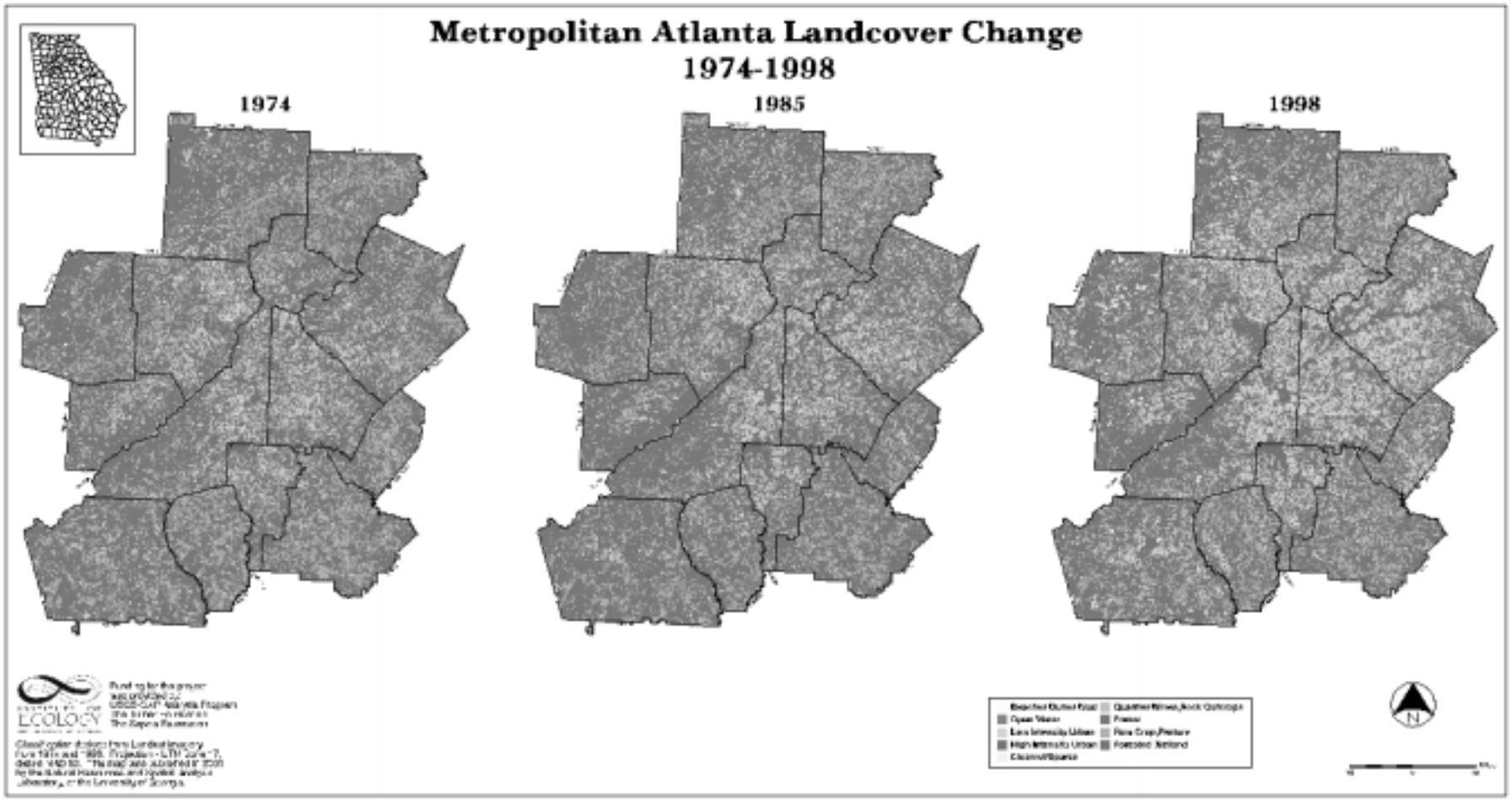
RESPONDING TO NORTH GEORGIA'S WATER RESOURCES PLANNING NEEDS

Land Use Changes in Metro Atlanta



Changes Resulting from Atlanta's Growth

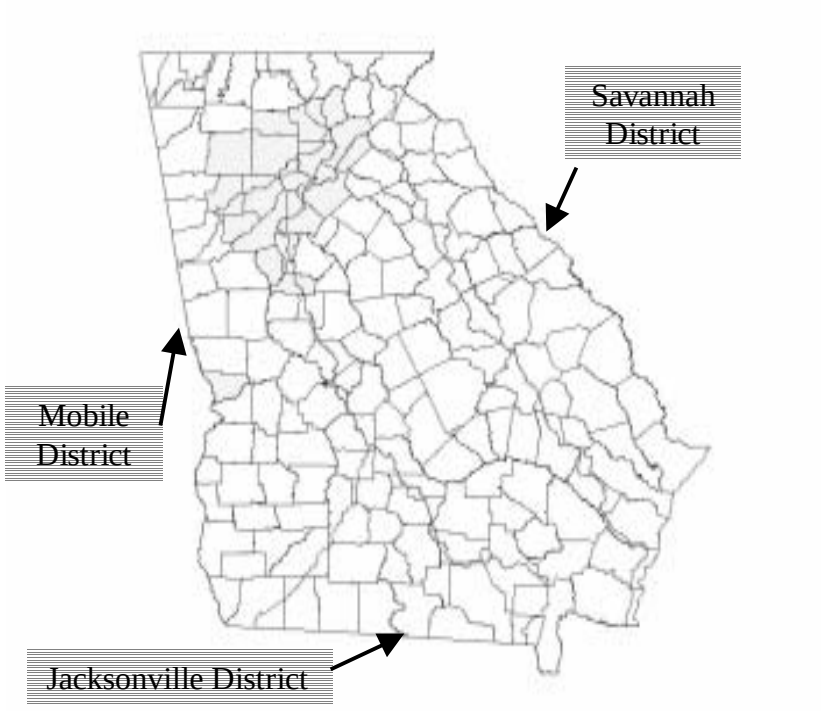
- Metro Area increasing in size (at least 16 counties comprise area)
- Population – over 4 million
- Population increased by 1 million between 1990-2000
- Urban sprawl
- Intense urban developments
- Widespread stream degradation
- NPS pollutant problems
- Increasing environmental awareness

Regional Problems affecting Water Resources

Planning and Environmental Division

- Conversion of land to intense urban uses
- Loss of riparian habitat
- Accelerated runoff rates/increased stream velocities
- Alteration of stream channels (i.e. bank erosion and bed degradation)
- Excessive sedimentation problems
- Non-point source pollution and TMDL issues

Strategy to Address Water Resources Problems and Opportunities



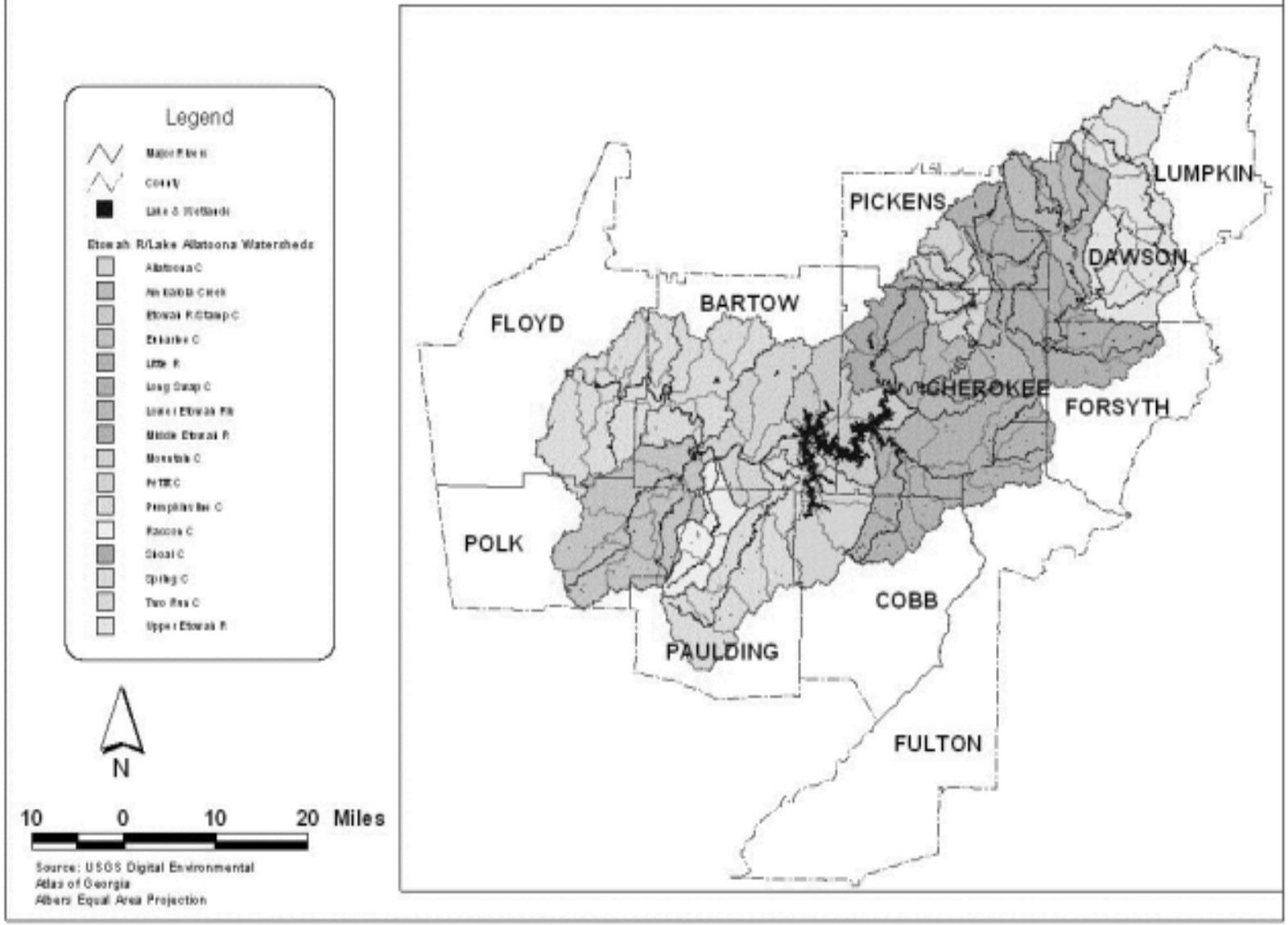
- Planner Forward in Atlanta
- North Georgia Planning Team
- Partnership between Mobile and Savannah Districts with SAD support
- Local contractor experience
- Meet with motivated non-federal interests
- Listen to the publics
- Understand legislative and judicial requirements

General Investigation Feasibility Studies

Planning and Environmental Division

- Lake Allatoona and Upper Etowah River Watershed
- Metro Atlanta
  - Nancy and Peachtree Creeks
  - Utoy, Sandy, and Proctor Creeks
  - Long Island, Marsh and Johns Creeks
  - Indian, Sugar, Intrenchment, Federal Prison, and Snapfinger Creeks
- Lake Lanier Watershed (proposed)

Etowah River / Lake Allatoona Watersheds



Stresses Affecting Lake Allatoona

- Shoreline erosion
- Sedimentation
- Eutrophication
- Fecal coliform bacteria
- High recreational use
- Water supply demands

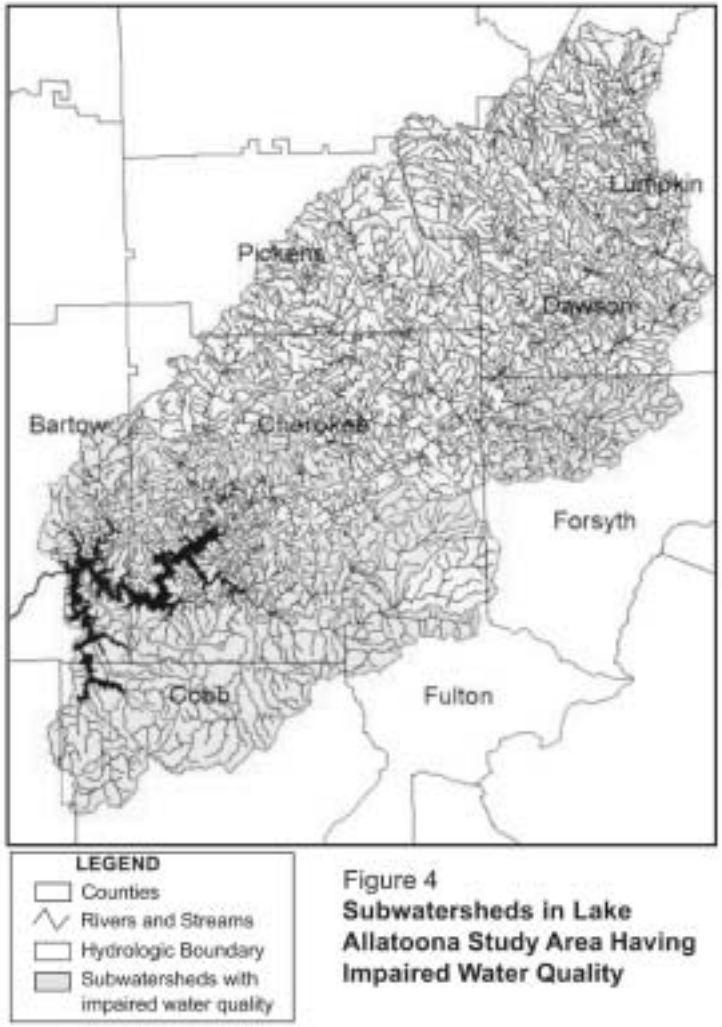
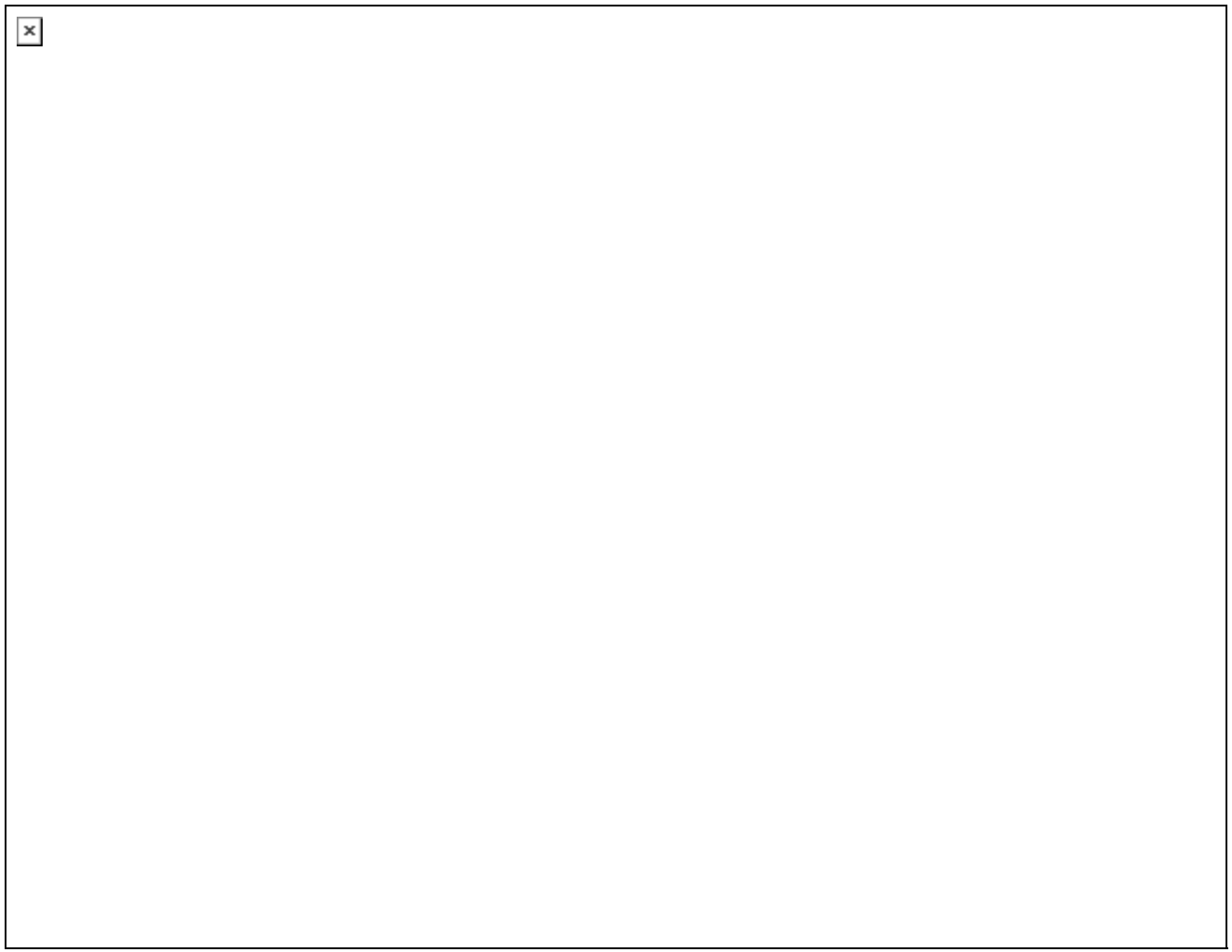
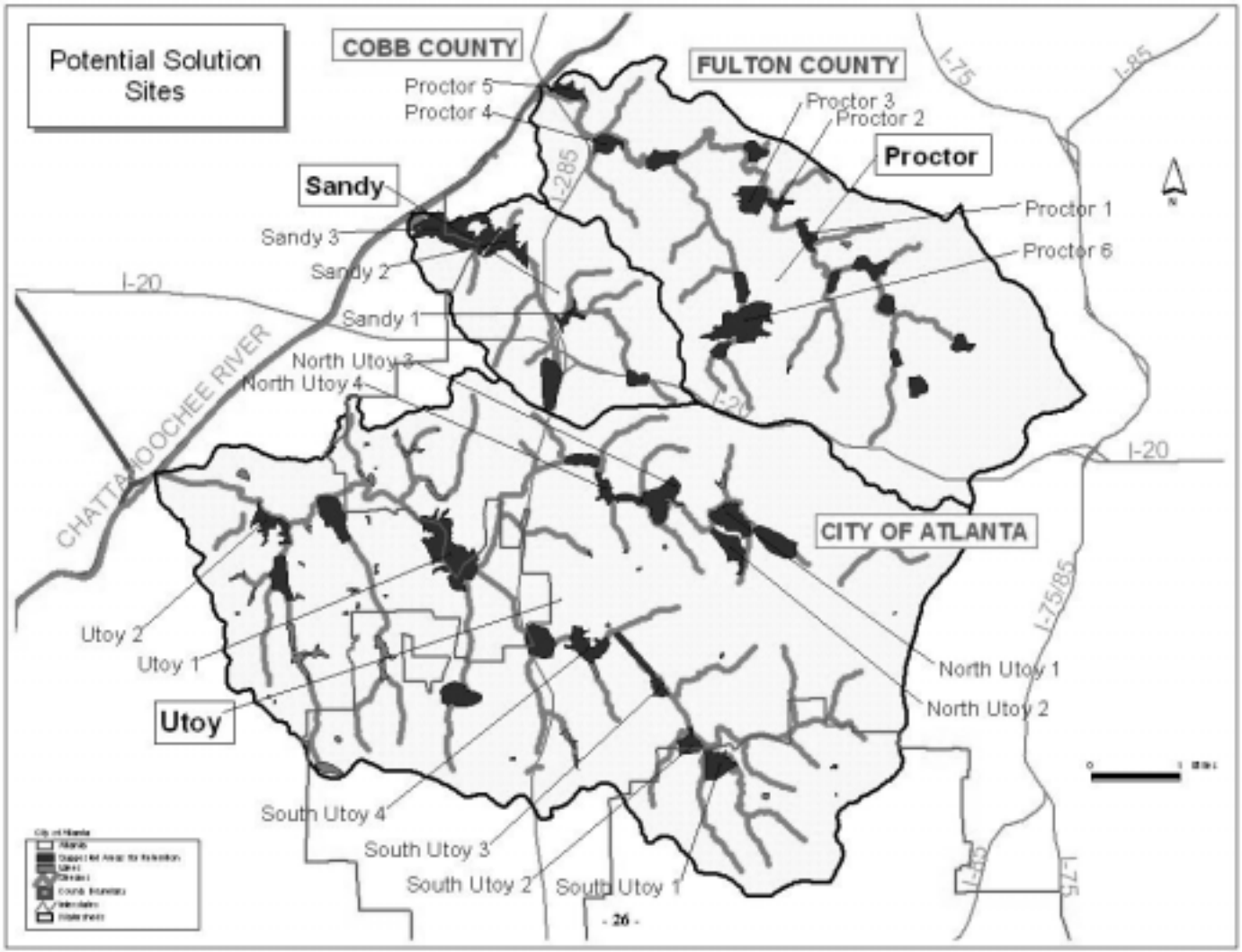


Figure 4
Subwatersheds in Lake Allatoona Study Area Having Impaired Water Quality

Metro Atlanta Watersheds



Utoy, Sandy and Proctor Creeks Study Area



Continuing Authority Projects

- 206 - Aquatic Ecosystem Restoration
  - 30 Preliminary Restoration Plan phase
  - 3 Environmental Restoration Report phase
- 1135 - Project Modifications for Improvements to the Environment
  - 1 Environmental Restoration Report phase

Stream Problems

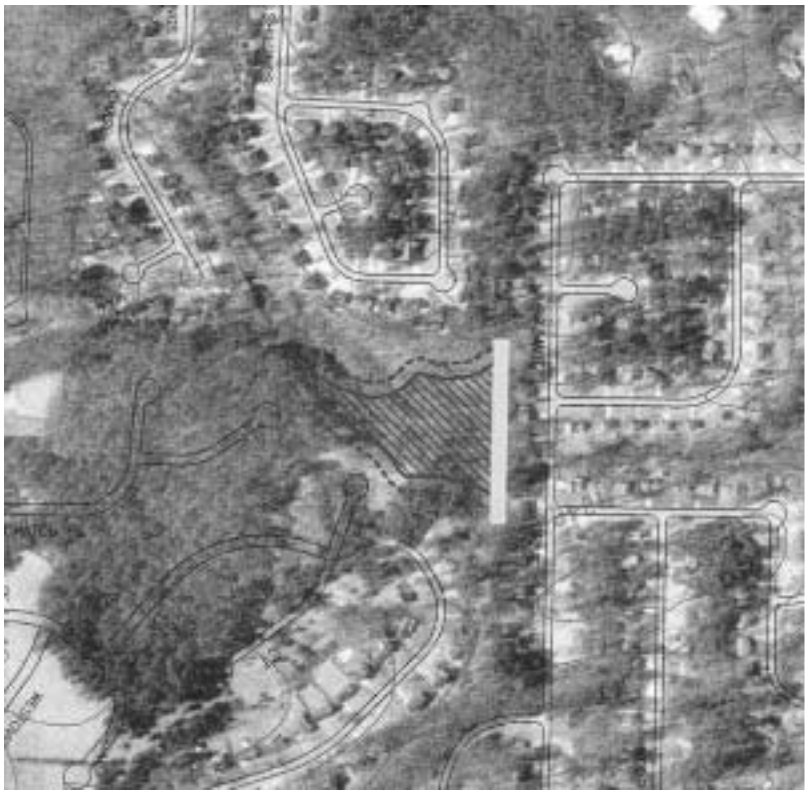
- Accelerated runoff rates/increased stream velocities
- Eroded stream banks and degraded streambeds
- Incised stream channels and loss of connection to flood plains
- Excessive concentrations of total suspended solids and high sedimentation rates
- Non-point Source Pollution
- Low biological productivity and diversity

Typical Views of Degraded Stream Channels and Associated Aquatic Habitat

Typical Environmental Restoration Measures

- Flow detention structures (i.e. headwater, mainstem, or off-channel)
- Sediment retention structures
- Establishment of vegetation buffers
- Streambank stabilization
- Grade control structures
- Development of instream habitat
- Artificial wetlands
- BMPs for stormwater and NPS runoff
- Recreational “green space”

Flow Retention/Sediment Detention Structures



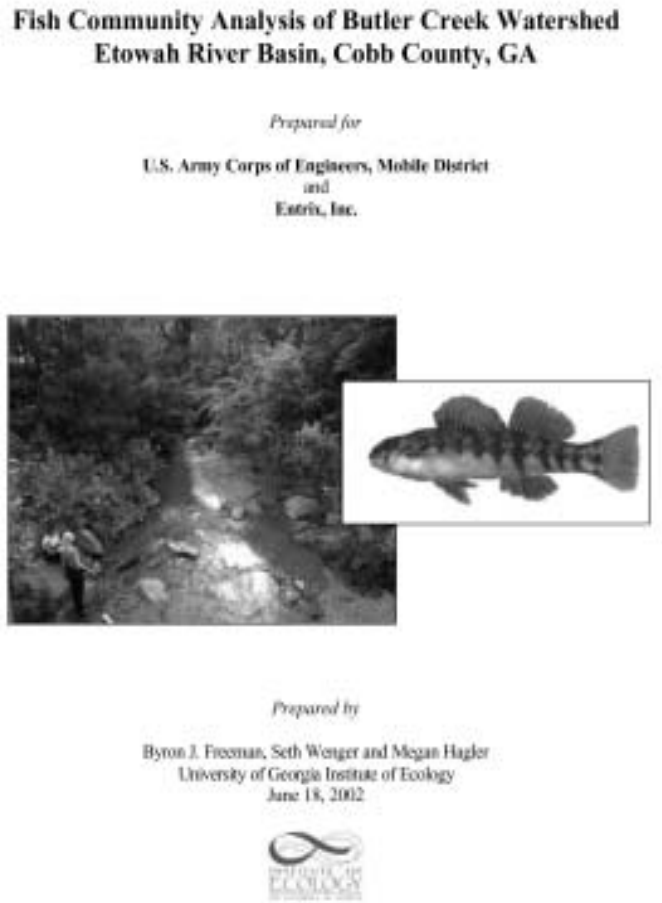
- Modify hydrology by reducing stream velocities
- Trap and retain sediments at controlled locations
- Reduce total suspended sediments
- Reduce flow related impacts to downstream areas

Stream Restoration Issues

- Rapidity of regional growth makes restoration planning similar to “painting a moving train”
- Uncertainty of effectiveness of future land use controls
- Positions of environmental agencies
- Presence of endangered and threatened species
- Fragmentation of habitats
- Ability to adequately describe and quantity anticipated environmental benefits
- Uncertainty of success

Fish Habitat Considerations in Siting Detention Structures

- Characteristics of aquatic populations
- Presence of endangered and threatened species
- Distribution of suitable habitat
- Connectivity with other populations



Fish Community Analysis of Butler Creek Watershed
Etowah River Basin, Cobb County, GA

Prepared for

U.S. Army Corps of Engineers, Mobile District
and
Entrix, Inc.

Prepared by

Byron J. Freeman, Seth Wenger and Megan Hagler
University of Georgia Institute of Ecology
June 18, 2002

Selection of Sites for Detention Structures

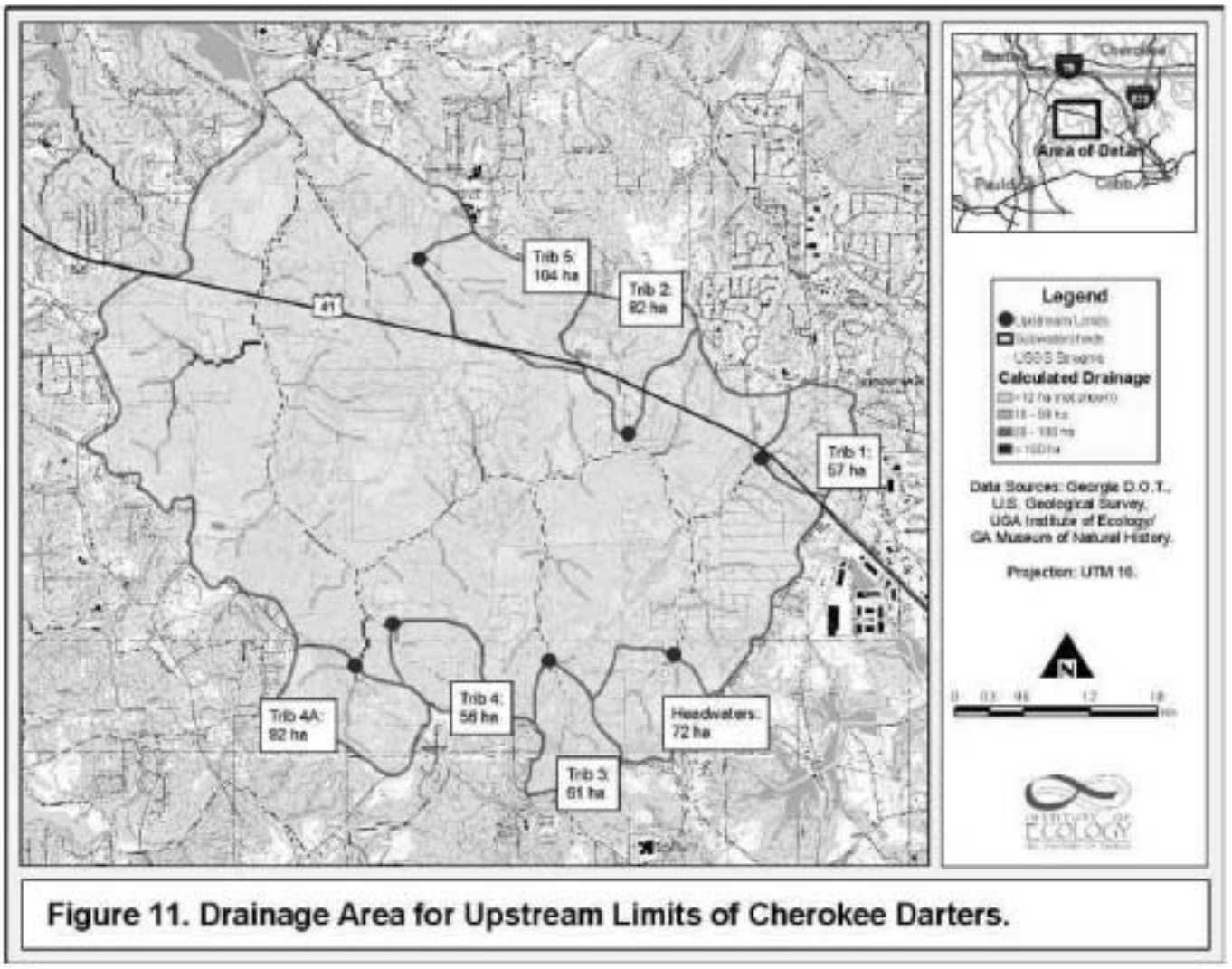
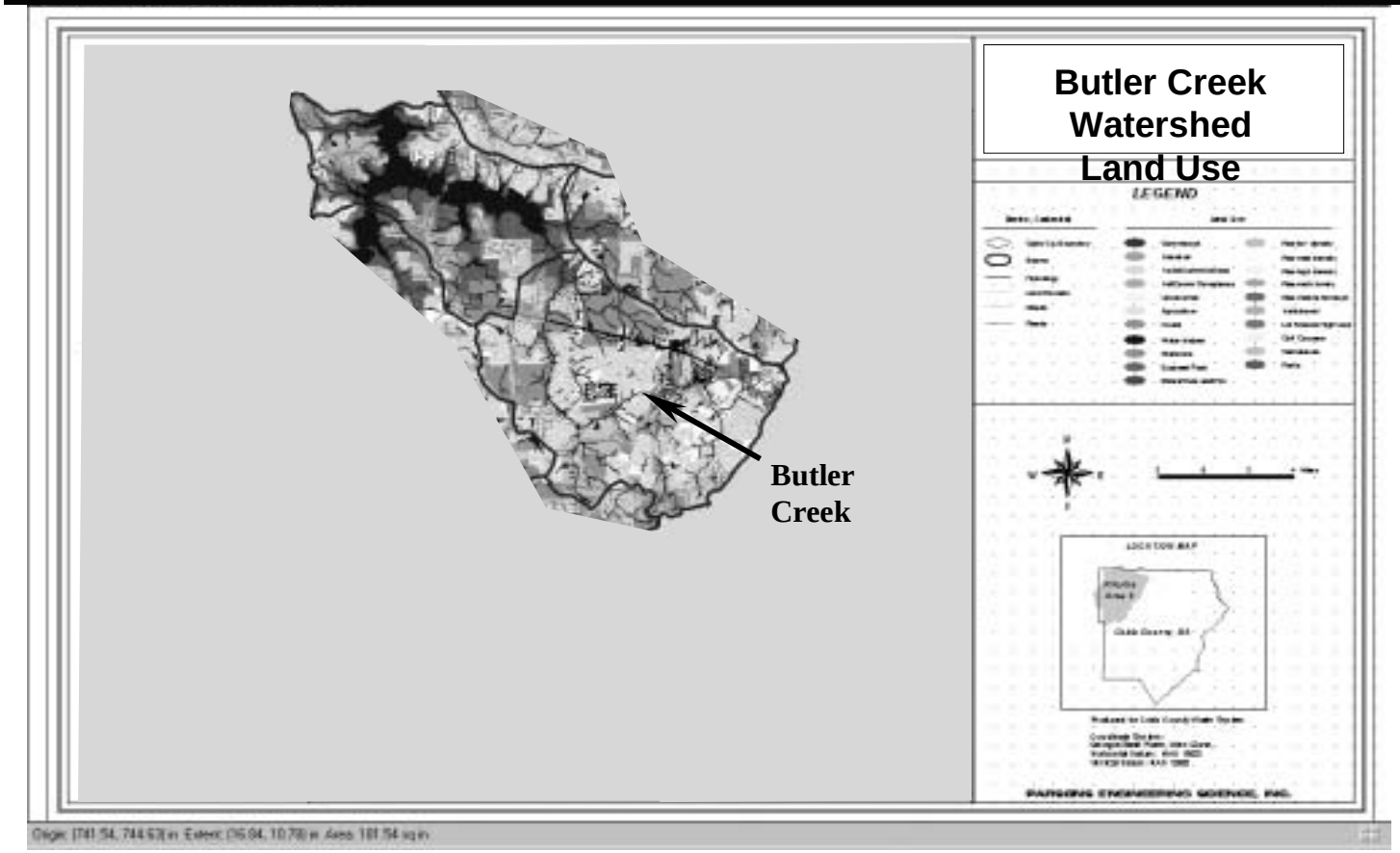


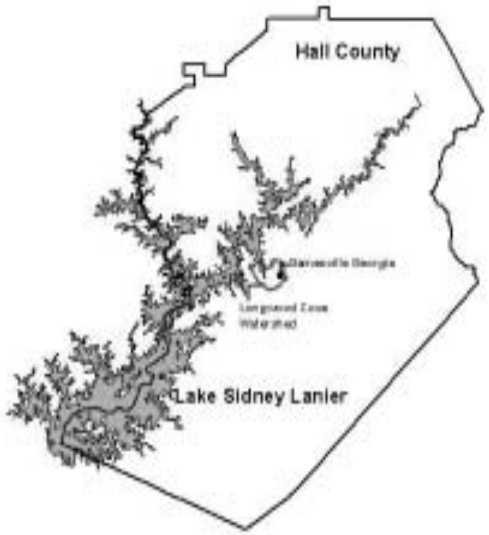
Figure 11. Drainage Area for Upstream Limits of Cherokee Darters.

Matching Detention Site Opportunities with Land Use Stressors

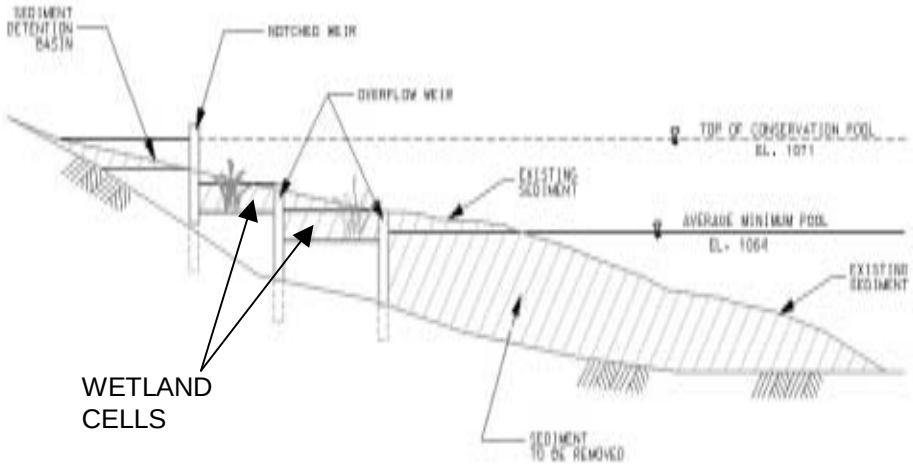
Planning and Environmental Division



Wetland Creation at Lake Lake Lanier

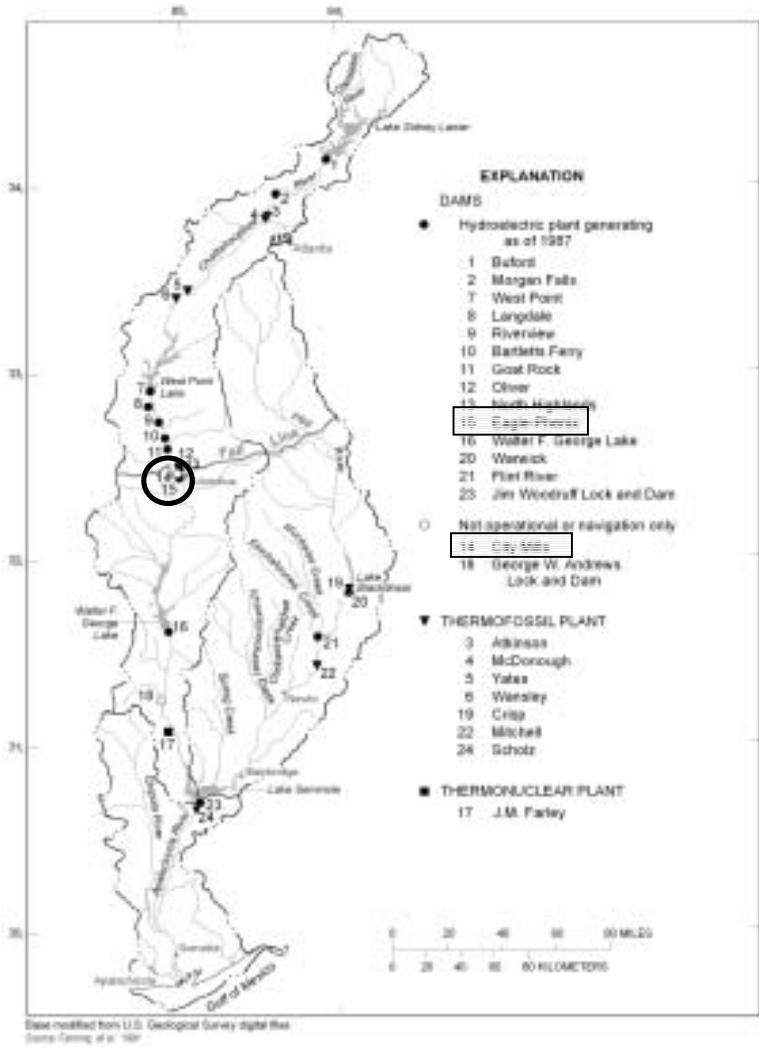


- Stream restoration
- Conversion of sediment deposits to productive habitats
- Recreation enhancements
- Lake-wide implications



Chattahoochee River Dam Removal

- Shoal bass
- Fall Line habitat restoration
- Historic resources
- Whitewater rafting
- Aesthetic improvements
- Downtown redevelopment

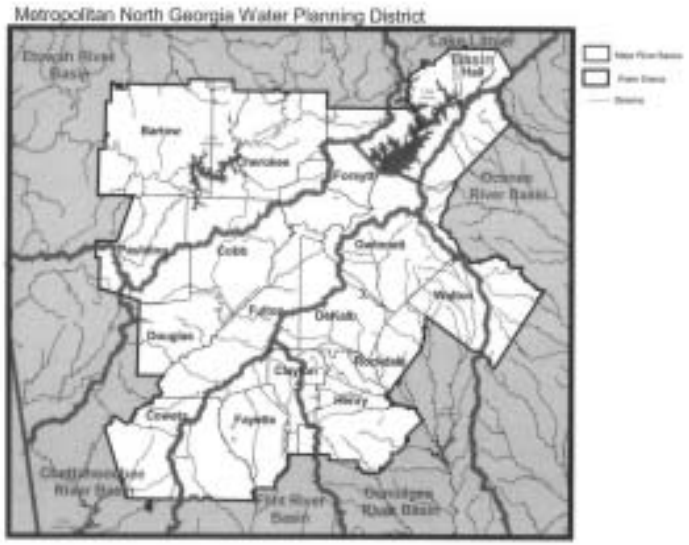


Section 22 Planning Assistance to States (PAS) Program

- Considerable local interest
- Satisfies two objectives
  - Serves immediate needs of partners
  - Foundation for additional federal assistance
- Types of inquiries received to date
  - “mitigation bank” planning
  - development of stormwater management plans
  - watershed assessments
  - special studies

Metropolitan North Georgia Water Planning District

- Expenditure of $300,000 authorized by the Energy and Water Development Appropriations Act of 2002 to address water resources problems.
- Reconnaissance Report in preparation to investigate water resources related problems and opportunities.
- Emphasis on stormwater management.
- The non-federal sponsor is the MNGWMD.



Issues/Concerns Potentially Affecting Success of North Georgia Efforts

- Rate of urban growth and speed of planning and implementation process of projects may not be compatible
- Section 206 Program is not adequate to fully address restoration needs
- Potential of Section 22 PAS not being fully tapped
- Regional approach to water resources problems superior to individual watershed solutions
- Innovation is a must
- Cooperation and partnerships a necessity